Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding the Economic and Innovation	)	GN Docket No. 12-268
Opportunities of Spectrum Through	)	
Incentive Auctions	)	
	)	
	)	

To: The Commission

COMMENTS OF
THE COMPUTING TECHNOLOGY INDSUTRY ASSOCIATION

The Computing Technology Industry Association ("CompTIA"), respectfully hereby submits these Comments in response to the Notice of Proposed Rulemaking (NPRM), Docket No.12-268, in the above captioned proceeding. Our comments focus specifically on the Federal Communications Commission's (FCC) proposal for creating "the world's first nationwide unlicensed spectrum band suitable for robust wireless broadband, on contiguous low-band frequencies."[1]

Discussion

The Computing Technology Industry Association (CompTIA) is a not-for-profit trade association representing the $3.6 trillion global information technology (IT)

[1] [1] Chairman Julius Genachowksi, Statement regarding Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auction; GN Docket 12-268, September 28, 2012, https://www.fcc.gov/encyclopedia/julius-genachowski-statements.

industry. CompTIA membership includes over 2,000 members and 1,000 business partners. Our members are at the forefront of innovation and provide a critical backbone that supports broader commerce and job creation. These members include computer hardware manufacturers, software developers, technology distributors, and IT specialists that help organizations integrate and use technology products and services. As a trade association, CompTIA is also the leading global provider of IT workforce certifications. Currently there are over 1.4 million CompTIA IT certification holders worldwide, and many of those are for IT security.[2]

It is against this backdrop that CompTIA respectfully submits comments in this proceeding. CompTIA fully supports and encourages the FCC to establish 5 contiguous nationwide guard bands for unlicensed low-band frequencies. The availability of unlicensed spectrum will have a positive rippling effect across our economy. It will help rural, remote, and underserved urban communities leapfrog into the modern age as our society becomes increasingly mobile.

The availability of nationwide contiguous unlicensed spectrum will attract the widest pool of investors and entrepreneurs. It will unleash a new wave of innovation much like the innovation that has already exploded in the licensed wireless spectrum marketplace, fostering innovation and spurring growth in the SMB ecosystem.

I. Unlicensed Spectrum Can Spur Investment and Job Creation in Rural, Remote and Underserved Urban Areas

We continue to have a "digital divide" in this country where vast swaths of our population do not have access to broadband connectivity.[3] The FCC has reported that

[2] The Computing Technology Industry Association, Information Technology: Generating Growth & Jobs for the U.S. Economy, 2011, http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDUQFjAA&url=http%3A%2F%2Fwww.comptia.org%2Fdocuments%2FGenerating_Jobs_White%2520paper_online_1618-US.pdf&ei=Q7QCUa3JDo6w0AHZlIC4DQ&usg=AFQjCNE3qN_rn6ZDXn5EVj7509r0JNOwIA&sig2=QZ3Y61uhXeOYp5fO8hmvFA&bvm=bv.41524429,d.dmQ.

[3] (http://www.broadbandmap.gov/),(http://www.ntia.doc.gov/press-release/2011/new-commerce-department-report-shows-broadband-adoption-rises-digital-divide-pers.

there are nearly 18 million Americans without access to the Internet and there are millions more without access to mobile broadband. This problem is exacerbated for citizens who reside in rural and remote areas without access to affordable and dependable wireless broadband services, and for citizens who reside in "dead zones." Dead zones are scattered throughout the US where citizens do not have access to affordable and/or reliable wireless communication services.[4] For these citizens mobile connectivity is a lifeline that provides access to the many benefits that come with our increasingly mobile economy. For example, in rural, remote and underserved urban areas access to wireless broadband is essential for job creation and economic expansion. As the US economy becomes increasingly mobile citizens in these communities will be left behind unless new and innovative products and services are developed to meet their mobile broadband needs.

In 2012, CompTIA published a study entitled "Trends in Enterprise Mobility."[5] There are several highlights from this report that merit a mention in these proceedings. For instance, growth in the mobility marketplace in the United States is driven by the availability of mobile devices such as smartphones, and tablets. Second, Internet access from these devices is expected to surpass wireline computer access by the year 2015. Third, the workforce is rapidly changing requiring employees to have access to mobile platforms and solutions.

The CompTIA Enterprise Mobility Trends report shows that businesses are increasingly spending more resources to enable the mobility trend. This is especially true for businesses that are national or regional in scope. These companies pursue national and/or regional mobile workforce strategies to improve the bottom line through higher worker productivity and efficiencies of scale.

---

[4] Dead Cell Zones, http://www.deadcellzones.com/broadband.html., FCC Dead Zone Broadband Reporting, **http://www.broadband.gov/qualitytest/deadzone/.**

[5] The Computing Technology Industry Association, Tends in Mobility, January 2012, http://www.comptia.org/news/pressreleases/12-03-05/IT_Departments_Scramble_to_Keep_Pace_with_Mobility_Growth_CompTIA_Research_Finds.aspx

As companies across sectors continue to invest in mobile workforce IT, communities without adequate access to wireless broadband will be at a distinct disadvantage, as compared with their counter-parts in metropolitan areas and cities. A study by SumTotal found that companies that deployed mobile solutions for their workforce reported a:

- 31.1% improvement/enhancement of worker productivity
- 14.2% increase in sales/revenue
- 12.3% improved competitive advantage/market share
- 5.8% improved field service response time.[6]

The study also found that:

> "Mobile business applications have become more affordable, convenient secure, productive and reliable. New technologies, such as broadband technology, can combine Bluetooth technology and wireless air card usage in standard Wi-Fi hotspots in many locations, enabling employees to stay connected from almost anywhere regardless of where they need to work."[7]

Finally, a report published by the Kaufman Foundation entitled ""The Ascent of America's High-Growth Companies," identified the geographic areas across the country with the highest percentage of growth companies. Not surprisingly, those growth companies were largely, if not exclusively, located in metropolitan areas.[8] Metropolitan areas have many advantages over rural and remote communities not least of which is the deployment of robust wireless infrastructures. Although there are many other factors that contribute to the economic growth of a community there is no dispute that wireless connectivity is a necessary element for spurring economic growth and job creation.

---

[6] SumTotal, Mobile Workforce Management Strategies: The Future of Strategic Mobile Workforce and Expense Management, 2011, http://www.sumtotalsystems.com/resources/login_global.html?id=158.
[7] SumTotal, *supra* note 6.
[8] Kaufman Foundation, The Ascent of America's High-Growth Companies, September 2012, http://www.kauffman.org/research-and-policy/high-growth-firms-flouris-in-unexpected-locations-and-industries-kauffman-studies-show.aspx

CompTIA firmly believes that the availability of super Wi-Fi like speeds delivered via 6 MHz low-power TV white space frequencies comprised of 5 guard bands can help these rural, remote and underserved urban areas leapfrog into the modern age. Otherwise, residents in geographic areas without affordable access to wireless broadband speeds are at a significant disadvantage and will be left behind in our increasingly mobile economy.

II. Unlicensed Spectrum will Usher a New Wave of Innovation Led by the SMB Sector

There is no doubt that US telecommunications companies have been responsible for deploying world-class wireless telecommunications networks leading to several wireless broadband innovations, such as 4G Long-Term Evolution (LTE) technology. However, it is also true that small and medium size businesses (SMBs) have been largely responsible for many of the new and innovative wireless products, services, applications, and hardware that have ushered in our new age of mobility generating billions of dollars in added value and competitive advantages to the U.S. economy.

In 2012, the publication Fast Company published a report entitled the "Worlds 50 Most Innovative Companies."[9] For the mobility sector, Fast Company highlighted 10 companies developing the most innovative products and services, and it was no coincidence that these companies where all start-ups. Unleashing unlicensed TV white space spectrum will result in a new wave of technological innovation, and if history repeats itself much of that innovation will be led by SMBs. SMB firms excel at identifying and creating new innovative products and services for niche and underserved markets. This approach levels the playing field between SMBs and much larger and better-capitalized Fortune 100 companies. SMBs have the advantage of being small, nimble and without the bureaucratic layers that prevail at many Fortune 100 companies. As such, SMBs and start-ups can be much more efficient and innovative at conceiving, developing, and deploying new products and services.

[9] Fast Company,2013, http://www.fastcompany.com/most-innovative-companies/2012).

A review of the type of services offered over wireless licensed networks and devices reveals a staggering stream of new and innovative platforms, products and services that have been deployed within a short window of time. For instance, many CompTIA member companies offer enterprise customers Mobile Device Management (MDM), Mobile Application Management (MAM), Wireless Expense Management (WEM), Bring Your Own Device (BYOD) migration plans, Radio Frequency Identification (RFID) solutions, Machine to Machine (M2M) product offerings, Mobile Payment platforms, and M-commerce to name but a few. One of the largest innovations that cuts across business and consumer sectors is the rapid growth of Cloud and the virtualization of a variety of platforms, products and services. These platform and product innovations have led to tremendous economic growth for the IT sector and the overall economy through the development of new microchip processors, software applications, devices, and other IT hardware. The glue that holds these technological developments together is a robust communications network.

Unlicensed spectrum is ripe for the development of new innovative products and services. This is especially true in light of the pending spectrum crunch that will result due to the ongoing proliferation of wireless devices and inefficient use of the spectrum bands as highlighted in the PCAST report.[10]

CompTIA is certain that creating 5 continuous nationwide 6 MHz guard bands for unlicensed spectrum will usher in a new age of mobile devices, products, services, and hardware.

III. Supporting the SMB Economy Through Unlicensed Spectrum

SMB's are the core of the American economy. There are approximately 30 million SMB's in the United States, which represent over 99 percent of all employer firms and employ over half of all private sector employees. Many participants in the IT industry are independent small businesses that provide a variety of functions for customers they

[10] President's Council of Advisors on Science and Technology, *Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth, July 20, 2012,* http://www.whitehouse.gov/administration/eop/ostp/pcast

serve. A sizeable portion of anticipated work force growth will emanate from start-ups and IT SMB firms. The IT SMB sector accounts for about 40% of industry jobs, or more than 2 million workers, and 6 million firms and self-employed entrepreneurs.[11]

This SMB community functions very much like an ecosystem. CompTIA member companies provide a variety of IT services to other SMB's that tend to serve local communities. Although CompTIA member companies serve many clients in large metropolitan areas they also serve clients located in rural, remote, and underserved urban areas.

A common concern among CompTIA members that provide services to rural, remote, and underserved urban areas is the lack of competitive choices for affordable wireless broadband services. Access to wireless broadband is a business imperative. Many of the cost savings associated with new technological platforms, such as Cloud computing and virtualization services cannot be fully realized without an adequate wireless Internet connection. In many communities wireless broadband is the most efficient and cost effective way to access the Internet.

As one example of many, a CompTIA member company was contracted to provide Cloud based services as a way to reduce costs to a healthcare facility located in an underserved community. Unfortunately, the medical healthcare facility could not benefit from many of the cost savings and efficiencies associated with Cloud services due to poor wireless Internet connectivity. This was a lost opportunity for all the parties involved. It was a loss to the IT SMB firm because they could not provide a client with an adequate Cloud service offering, it was a loss for the healthcare facility because it could leverage the cost savings associated with Cloud services, and it was a loss for the patients of the clinic who could not benefit from the latest technological innovations, such as telemedicine.

Conclusion

[11] Small Business Administration, Office of Advocacy, Frequently Asked Questions, September 2012, http://www.sba.gov/sites/default/files/FAQ_Sept_2012.pdf, see also http://web.sba.gov/faqs/faqindex.cfm?areaID=24.

CompTIA respectfully encourages the Commission to establish 5 contiguous nationwide guard bands of unlicensed spectrum. Such an approach will ensure that all citizens regardless of the locality can benefit and participate in our mobile economy. A continuous nationwide band of low powered unlicensed spectrum will help relieve the spectrum crunch and spur new and innovative classes of platforms, products, and services fostering job creation and economic growth for the SMB sector and the economy at large.

Respectfully submitted,

January 25, 2013

Computing Technology Industry Association

By: David Valdez

David Valdez
515 2nd St, NE
Washington, DC 20008
202-441-3292

On Behalf of the Computing Technology Industry Association